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temperature of the probe, and 3°C below the melting temperature of the probe] of 37°C for 16 hours in 5X SSC, 5X Denhardt solution, 25% formamide, and 100 µg/ ml denatured salmon sperm DNA, wherein said probe comprises an HIV-2 nucleic acid molecule, which hybridizes to HIV-2 ROD genomic DNA under hybridization conditions [selected from the group consisting of 42°C below the melting temperature of the probe, 20°C below the melting temperature of the probe, and 3°C below the melting temperature of the probe] of 37°C for 16 hours in 5X SSC, 5X Denhardt solution, 25% formamide, and 100 µg/ ml denatured salmon sperm DNA, with washes in 2X SSC, 0.1% SDS at 25°C; 1X SSC, 0.1% SDS at 60°C; or 0.1X SSC, 0.1% SDS at 60°C;

b) washing the resulting hybrid under conditions selected from the group consisting of [42°C below the melting temperature of the probe, 20°C below the melting temperature of the probe, and 3°C below the melting temperature of the probe] 2X SSC, 0.1% SDS at 25°C; 1X SSC, 0.1% SDS at 60°C; and 0.1X SSC, 0.1% SDS at 60°C; and

c) detecting said hybrid.

92. (Amended) A method of detecting HIV-2 retrovirus nucleic acid in a biological sample, said method comprising:

a) contacting said sample with an HIV-2 specific probe under hybridization conditions [selected from the group consisting of hybridization conditions of 42°C below the melting temperature of the probe, 20°C below the melting temperature of the probe, and 3°C below the melting temperature of the probe] of 37°C

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for 16 hours in 5X SSC, 5X Denhardt solution, 25% formamide, and 100  $\mu$ g/ml  
denatured salmon sperm DNA,

wherein said probe comprises an HIV-2 nucleic acid molecule obtained from nucleotides 1-380 of the U3/R region of HIV-2, nucleotides 1-1566 of the *gag* gene of HIV-2, nucleotides 1114-1524 of the *gag* gene, nucleotides 1-405 of the *gag* gene, nucleotides 406-1155 of the *gag* gene, or nucleotides 1-2673 of the *env* gene of HIV-2, and

wherein said probe hybridizes to HIV-2ROD genomic DNA under hybridization conditions [selected from the group consisting of 42°C below the melting temperature of the probe, 20°C below the melting temperature of the probe, and 3°C below the melting temperature of the probe] of 37°C for 16 hours in 5X SSC, 5X Denhardt solution, 25% formamide, and 100  $\mu$ g/ ml denatured salmon sperm DNA, with washes in 2X SSC, 0.1% SDS at 25°C; 1X SSC, 0.1% SDS at 60°C; or 0.1X SSC, 0.1% SDS at 60°C;

b) washing the resulting hybrid under conditions selected from the group consisting of [42°C below the melting temperature of the probe, 20°C below the melting temperature of the probe, and 3°C below the melting temperature of the probe] 2X SSC, 0.1% SDS at 25°C; 1X SSC, 0.1% SDS at 60°C; and 0.1X SSC, 0.1% SDS at 60°C; and

c) detecting said hybrid.

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99. (Amended) A method of producing an HIV-2 specific hybridization probe for HIV-2 retrovirus nucleic acid, said method comprising:

- a) preparing a nucleic acid insert, which hybridizes to HIV-2ROD genomic DNA under hybridization conditions [selected from the group consisting of 42°C below the melting temperature of the insert, 20°C below the melting temperature of the insert, and 3°C below the melting temperature of the insert] of 37°C for 16 hours in 5X SSC, 5X Denhardt solution, 25% formamide, and 100 µg/ ml denatured salmon sperm DNA, with washes in 2X SSC, 0.1% SDS at 25°C; 1X SSC, 0.1% SDS at 60°C; or 0.1X SSC, 0.1% SDS at 60°C;
- b) introducing the insert into a recombinant cloning vector;
- c) introducing said vector into a competent cellular host; and
- d) recovering the DNA recombinants.

101. (Amended) A method of producing an HIV-2 specific hybridization probe for HIV-2 retrovirus nucleic acid, said method comprising:

- a) preparing a nucleic acid insert, wherein said insert is obtained from nucleotides 1-380 of the U3/R region of HIV-2, nucleotides 1-1566 of the *gag* gene of HIV-2, nucleotides 1114-1524 of the *gag* gene, nucleotides 1-405 of the *gag* gene, nucleotides 406-1155 of the *gag* gene, or nucleotides 1-2673 of the *env* gene of HIV-2, and wherein said insert hybridizes to HIV-2ROD genomic DNA under hybridization conditions [selected from the group consisting of 42°C below the melting temperature of the insert, 20°C below the melting temperature of the insert, and 3°C below the melting